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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,539	03/01/2002	Henner W. Meinhold	10001.001500 (NVLS 696)	2254

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EXAMINER

VO, ANH T N

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 01/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
10/087,539

Applicant(s)

MEINHOLD ET AL.

Examiner

Anh T. N. Vo

Art Unit

2861



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e). *
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2861

DETAILED ACTION

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because it does not provide an application number and filing date.

Specification

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claims Rejections

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2861

Claims 1-3, 5, 6, 13, 15-16, 21, 23 -24, and 26 are rejected under 35 USC 102 (b) as being anticipated by Carmichael et al. (US Pat. 3,852,768).

Note: The method steps are inherently taught in the apparatus device/limitations in the rejections as follow:

Carmichael et al. disclose in Figures 1-5 a sensor for detecting ink droplets ejected from an ink jet printer comprising:

- a first plate (3a) and a second plate (3b) forming a capacitor, the first plate and the second plate being disposed to allow a droplet to pass between them (Figure 1);
- an amplifier (10) coupled to the first plate (3a), the amplifier configured to generate an output signal indicative of a characteristic of the droplet (Figure 1);
- a bias voltage coupled to the second plate (3b) (Figure 1 and 4);
- wherein the amplifier (10) includes a charge sensitive amplifier (Figure 4);
- wherein the droplet is from an ink-jet print head configured to deposit material on a wafer (6) (Figure 1);
- wherein the characteristic includes drop velocity (column 3, lines 4-10).

Claims 1-2, 4, 6-10, 13-14, 16-18, 20 -22, and 24-25 are rejected under 35 USC 102 (e) as being anticipated by Sarmast (US 2003/0011663A1).

Note: The method steps are inherently taught in the apparatus device/limitations in the rejections as follow:

Art Unit: 2861

Sarmast discloses in Figures 1-9 a sensor structure for detecting ink droplets ejected from an ink jet printer comprising:

- a first plate (160b) and a second plate (160a) forming a capacitor, the first plate and the second plate being disposed to allow a droplet (164) to pass between them (Figures 3-4);
- an amplifier (180) coupled to the first plate (160b), the amplifier configured to generate an output signal indicative of a characteristic of the droplet (Figure 4);
- a bias voltage (184) coupled to the second plate (160a) (Figure 4);
- wherein the amplifier (180) includes a charge sensitive amplifier (Figure 4);
- wherein the characteristic includes drop mass (Figures 3- 4);
- wherein the droplet (164) is from an ink-jet print head (142) configured to deposit material on a wafer (166) (Figure 6);
- wherein the output signal is employed to calibrate a nozzle that dispensed the droplet (Figures 3-4);
- wherein the apparatus is included in an integrated circuit manufacturing equipment (102) (Figure 4);
- wherein the output signal is provided to a signal processing device (102) (Figure 4); and
- wherein the signal processing device (102) includes a computer (not shown) (Figure 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior arts are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 2861

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 11-12, 20 are rejected under 35 USC 103 (a) as being unpatentable over Carmichael et al. (US Pat. 3,852,768) in view of Osborne (US Pat. 4,922,268).

Note: The method steps are inherently taught in the apparatus device/limitations in the rejections as follow:

Carmichael et al. disclose the basic features of the claimed invention was stated above but do not disclose a sensor module located near a wafer processing chamber to allow a calibration of a print head that dispensed the droplet and the print head includes a plurality of nozzles.

However, Osborne discloses in Figures 4-5 an ink jet printer comprising:

- a sensor module (24) located near a wafer processing chamber to allow a calibration of a print head (16) that dispensed the droplet (Figure 4, column 2, lines 11-15);
- the print head (16) includes a plurality of nozzles (21).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the teaching of Osborne into the Carmichael et al. ink jet printer for the purpose of detecting an ink droplet to calibrate the displacement of the nozzle arrays thereby resulting in a high quality image being produced.

Serial Number: 09/996,860

Page 6

Art Unit: 2861

CONCLUSION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo whose telephone number is (703) 305-8194. The examiner can normally be reached on Tuesday to Friday from 8:00 A.M. to 5:00 P.M..

The fax number of this Group 2861 is (703) 305-3431 or 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



ANH T.N. VO
PRIMARY EXAMINER

January 22, 2003